acer

AIT Drive

User's Guide GB

用戶指南 CT

SDX-400C

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- Wohngegenden
- Gewerbegebiete
- Leichtindustriegebiete

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사용자 안내문

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주거지역에서는 물론 모든 지역에서 사용할 수 있습니다.

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SDX-400C Tape Drive

The SDX-400C drive is a high capacity data storage device using Advanced Intelligent tape AIT (Advanced Intelligent Tape) technology. The SDX-400C drive achieves high data reliability through Read-After-Write, an additional level of Error Correction Code, and other features.

The SDX-400C drive stores data on tape using a standard format called AIT and ALDC formats.

Introduction

Product Features

	SDX-400C *
Data Capacity	35 GByte capacity (with AIT-1 230 m tape) (approximately 70 GByte to 105 GByte with Data Compression)
Transfer Rate (sustained)	4 MByte/sec (approximately 8 MByte/sec to 12 MByte/sec with Data Compression)

* Data compression function is available with SDX-400C.

- Supported Format : AIT-1 (Not support AIT-2 format)
- Burst Transfer Rate
  - 12 MBytes/sec Asynchronous
  - 40 MByte/sec Synchronous
- Large 10 M Byte Buffer Memory
- 3.5" form factor, 5.25" from factor
- Embedded SCSI Interface
  (ULTRA/WIDE and LVD/SE (single-ended) model (SDX-400C))
- Supports Variable or Fixed Record Length
- Supports SCSI Disconnection/Arbitration
- Frame Rewrite Function
- Three levels of Error Correction Code (ECC)
- High Speed search (120 times normal Read/Write speed)
- Random Read, Append Write

Precautions

Installation

Avoid placing the drive in a location subject to:

- high humidity
- high temperature
- mechanical shock and vibration
- direct sunlight

Operation

- Do not move the drive while it is operating. It may cause malfunction.
- Avoid exposing the drive to sudden changes from a low to high in temperature. This may cause water condensation to collect inside the drive. If the ambient temperature should suddenly rise while the drive is turned on , wait at least one hour before turning on the drive. If you attempt to operate the drive immediately after a sudden increase in temperature, a malfunction may occur.
- Turning off the power to the drive while it is writing to tape may cause the tape to become unreadable. All previously negotiated parameters will be lost, whenever power to the drive is cycled.

Transportation

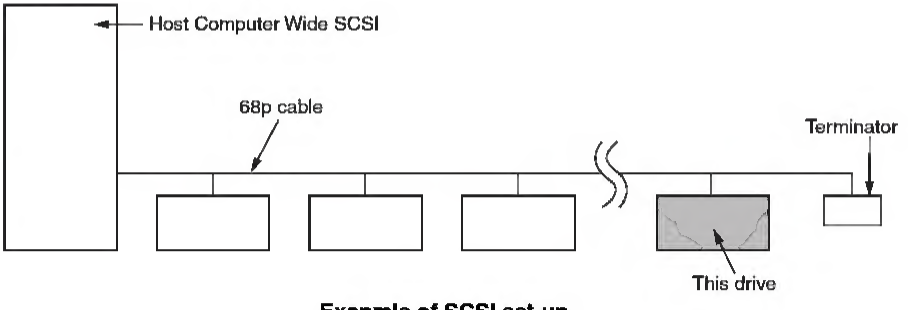
- Keep the original packing materials to facilitate transportation of the drive.
- Always remove the tape before moving the drive. After removing the drive from the computer, repack the drive into its original packing.

Notice of SCSI Termination

The SDX-400C conforms to the Microsoft PC97 standard which requires the internal (naked) drive to be terminated with an external terminator.

Microsoft PC97 SCSI requirements

SCSI peripherals must not terminate the bus. Both internal and external cable ends are instead terminated by plug-in connectors.



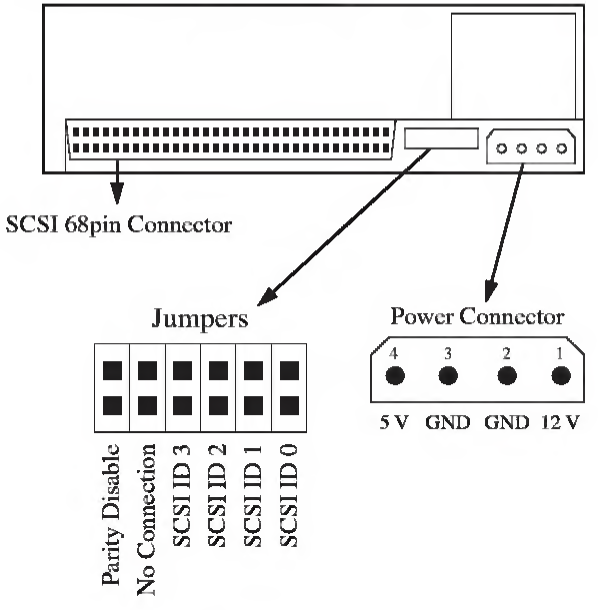
Exapmle of SCSI set-up

Installation

SCSI Connection/Setting the SCSI ID

SCSI ID

SCSI ID	P.D.	N.C.	3	2	1	0
0			■	■	■	■
1			■	■	■	□
2			■	■	□	■
3			■	■	□	□
4			■	□	■	■
5			■	□	■	□
6			■	□	□	■
7			■	□	□	□
8			□	■	■	■
9			□	■	■	□
10			□	■	□	■
11			□	■	□	□
12			□	□	■	■
13			□	□	■	□
14			□	□	□	■
15			□	□	□	□



Parity

Disable	□□
Enable	■

Note : ▯ = CLOSED/Jumper

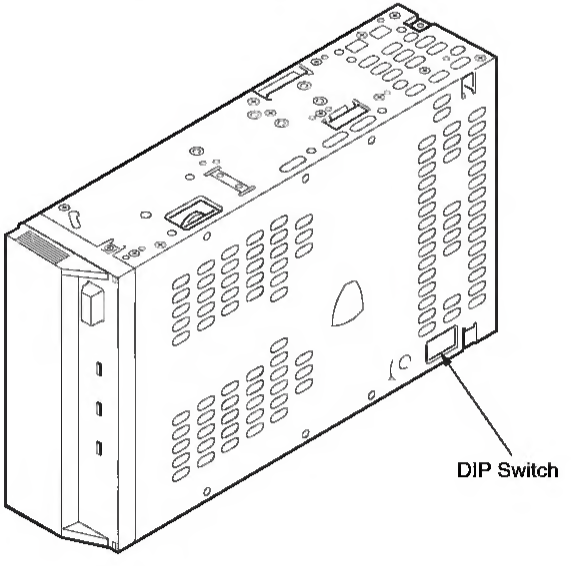
▪ = OPEN/Jumper not installed

▯ Don't care

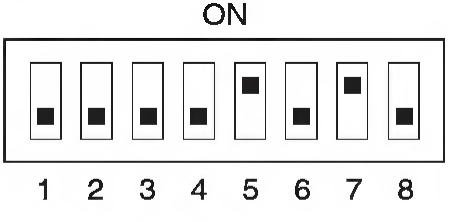
Parity Disable Jumper

Parity check function can be disabled by Jumper. Parity cbeck is disabled while left end jumper is installed. Parity generate function is always enabled.

Option Switches (DIP Switch)



DIP Switch Positions



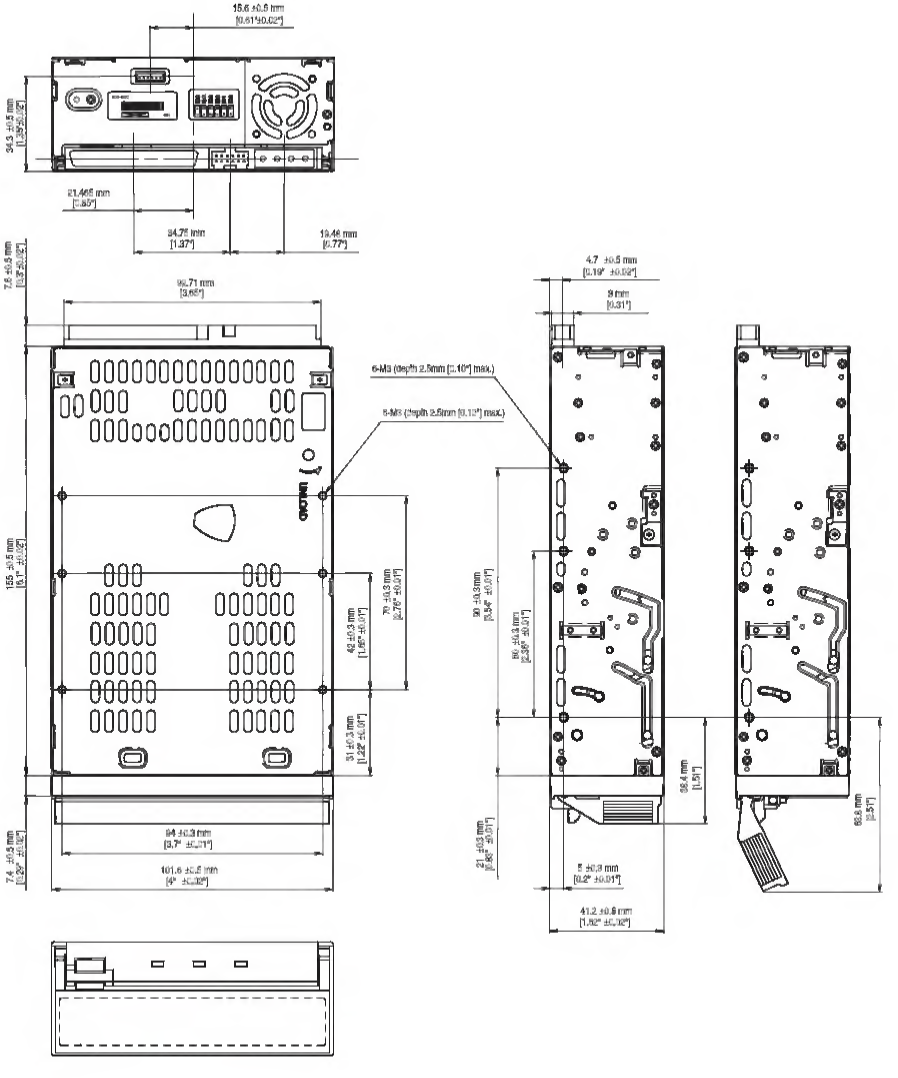
1 Reserved (OFF)
2 Reserved (OFF)
3 Reserved (OFF)
4 Reserved (OFF)
5 Terminator Power (ON)
6 Reserved (OFF)
7 DC Control (1) (ON)
8 DC Control (2) (OFF)

Data Compression Control DIP switch

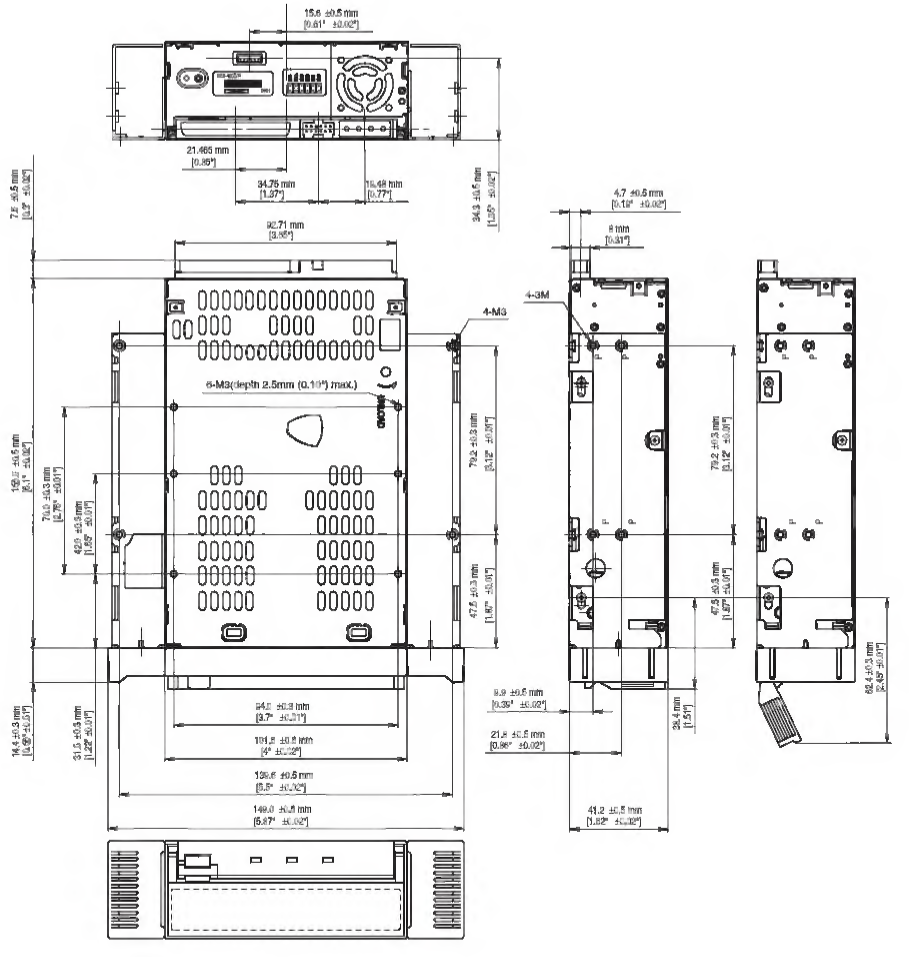
Data compression can be selected by DIP switches. Data compression is enabled while position 7 [DC Control (1)] is ON. Control by bost can be disabled when position 8 [DC Control (2)] is ON.

Mounting Holes

For 3.5" Standard Height (SDX-400C)



For 5.25" Half Height (SDX-400C/R)

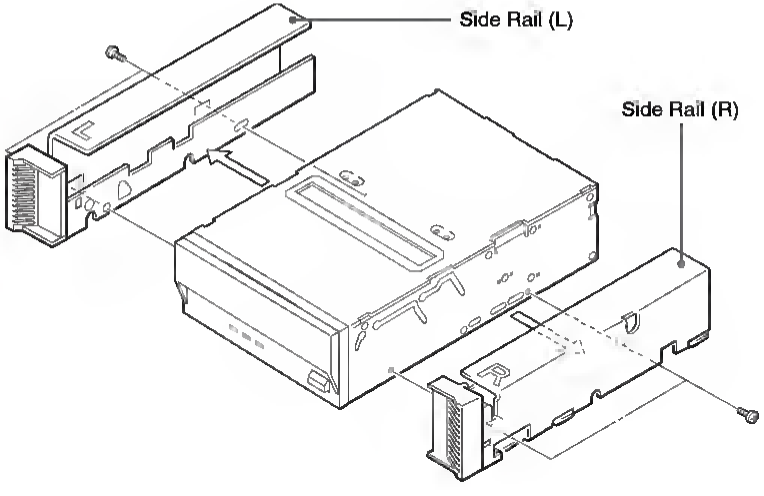


Remodeling from 5.25" Model to 3.5" Model

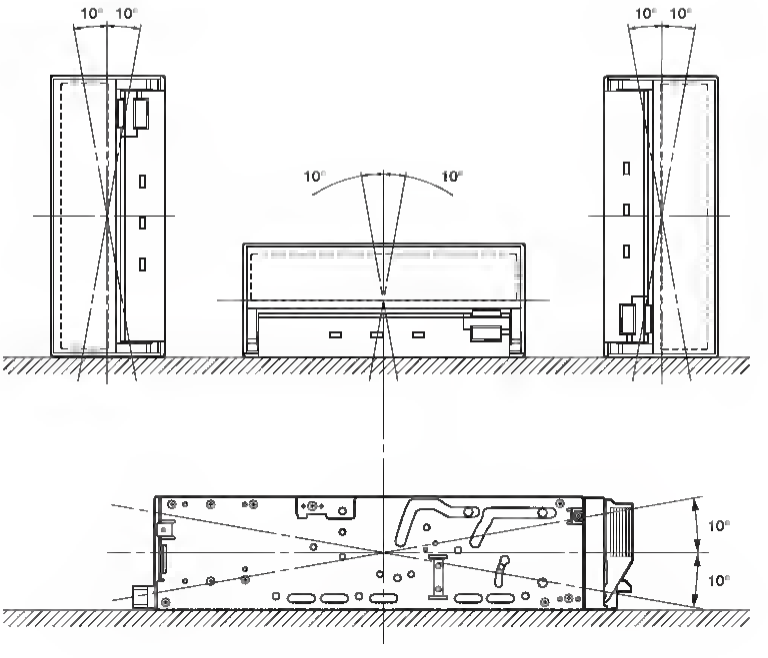
You can remodel the SDX-400C/R (5.25" model) to the SDX-400C (3.5" model) yourself.

1 Remove the 2 screws for each side rail.

2 Take the side rail off.



Orientation

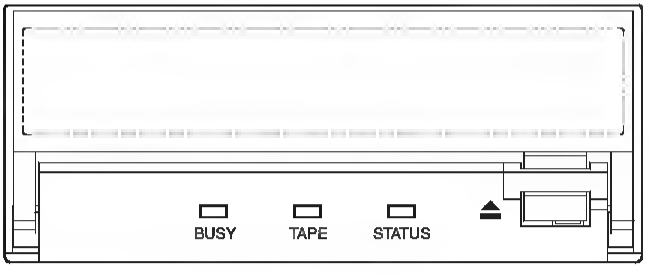


Operation

Location of 3 LEDs

There are three LED indications (BUSY,TAPE and STATUS) and an EJECT button on the front panel of the unit.

Front Panel (for 3.5" Standard Height)

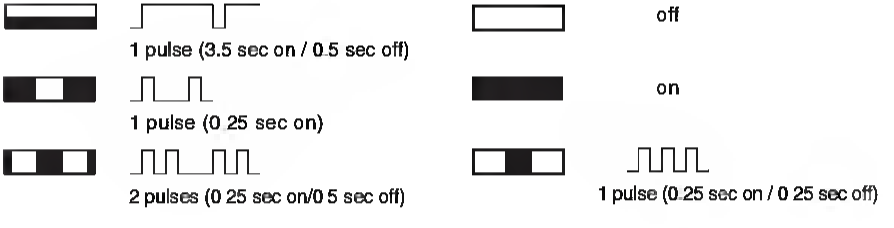


LED Indication for Drive Status

The LED indicators are defined as follows.

LED			State		
BUSY	TAPE	STATUS	Activity	Cartridge	Other
			None	None	None
			SCSI	None	None
			Drive	Loading/Unloading	None
			Drive	Loading/Unloading	Write Protected
			None	Loaded	Cleaning Tape at EOM
			None	Loaded	None
			SCSI	Loaded	None
			SCSI/Drive	Loaded	None
Independent			*	Loaded	Write Protected
Independent		Independent	*	Loaded	Error Rate Warning
*	*		*	*	Cleaning Request
*	*		*	*	Self test Failure
	*	*	*	*	Waiting for Reset
*		*	*	*	Waiting for Eject

* : Not defined



Drive Operation

Loading a Tape

Insert a cassette into the slot on the front panel with the arrow on the cassette pointing towards the drive. As the cassette is inserted, the drive takes it and automatically loads it into drive mecbanism.

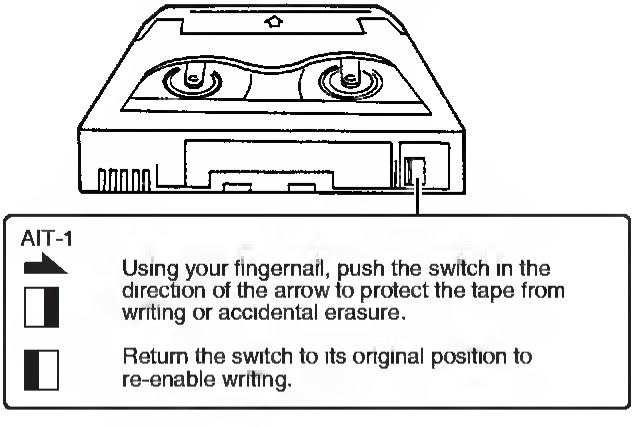
Unloading a Tape

The cassette can be removed from the SDX-400C either in response to a SCSI Unload Command, or by pressing the eject bottom.

By pressing Eject button, the tape goes to BOT, the drive unthreads it, and ejects the cassette from the slot.

Write-protecting a Tape

Cassettes can be write-protected by sliding the tab on the back of the cassette. In this state, data can be read from the tape but not written onto it.


AIT-1
Using your fingernail, push the switch in the direction of the arrow to protect the tape from writing or accidental erasure.
Return the switch to its original position to re-enable writing.

Using a Cleaning Cassette

In case of SDX-400, a cleaning function is built in the drive and hence, a periodic cleaning using cleaning cassette sucb as other format requires is not necessary. However, when the drive does not recover at the worst case, cleaning cassette is recommended to use.

Emergency Tape Removal Procedure

1. Remove the drive from the chassis or enclosure to allow access to the bottom and right side of the drive.

2. Remove the drive's top cover.

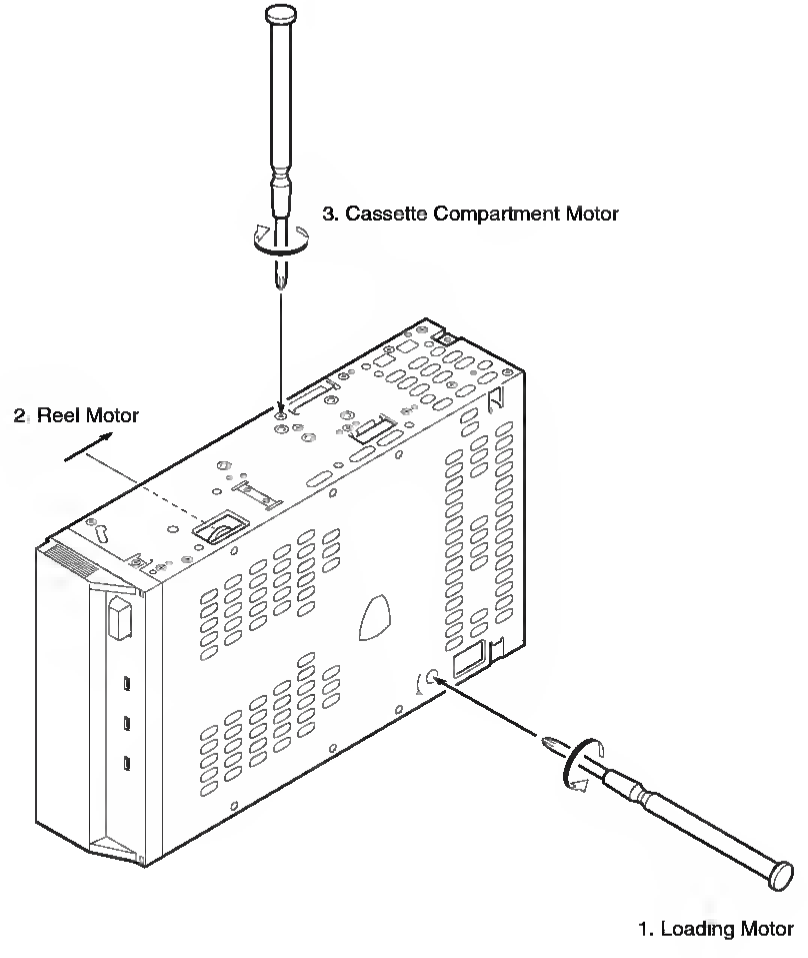
3. Locate the small opening in the bottom of the drive and insert the tip of a precision screwdriver so that the Threading motor shaft can be rotated.

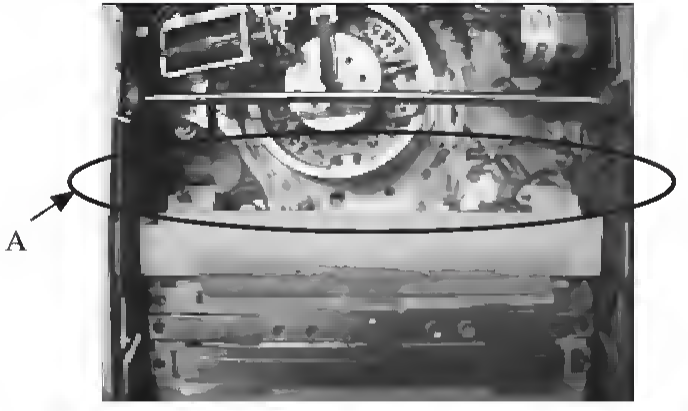
4. Rotate the motor shaft counterclockwise to bring the threading mechanism back to the initial position. (Refer to the photo-1 on page 18.)

5. Before manual eject procedure, tape slack must be removed in order to prevent tape damage. Press and rotate the gear mechanism located on the right side of the drive clockwise to tighten the tape.

6. After the tape slack has been removed, turn the screw located on the right side of the drive clockwise by a precision screwdriver until the tape cartridge is lifted out of the drive mechanism and is ejected.

7 Return the drive to Acer for repair.





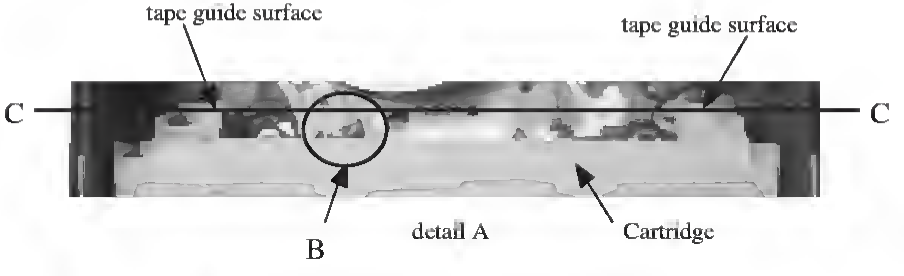


Photo-1: The Initial Position of the Threading Mechanism

Caution

Stop rotating the motor shaft immediately, when the guide B (see detail A of Photo-1) gets to the area below the line C-C (This line is defined by 2 circular tape guide surfaces of the cartridge). Otherwise the gear of the drive can be damaged.

Interface Implementation

Supported SCSI Messages

Abort

Bus Device Reset

Command Complete

Disconnect

Extended Message

– Synchronous Data Transfer Request

– Wide Data Transfer Request

Identify (w/&w/o Disconnect)

Ignore Wide Residue

Message Parity Error

Message Reject

No Operation

Restore Pointers

Save Data Pointer

Supported SCSI Commands

Erase

Inquiry

Load/Unload

Locate

Log Sense

Log Select

Mode Select

Mode Sense

Prevent Allow Medium Removal

Read

Read Block Limits

Read Buffer

Read Position

Report Diagnostic Result

Release Unit

Receive Density Support

Report Luns

Request Block Address

Request Sense

Reserve Unit

Rewind

Seek Block

Send Diagnostic

Space

Test Unit Ready

Verify

Write

Write Buffer

Write Filemarks

Specification

Product Specifications

Dimensions

	SDX-400C	SDX-400C/R
Height	41.2 mm (1.62 in)	41.2 mm (1.62 in)
Width	101.6 mm (4.0 in)	149.0 mm (5.87 in)
Depth	155.0 mm (6.1 in)	155.0 mm (6.1 in)

Altitude

Operating	0 to 10,000 feet

Vibration

Operating	Swept Sine 5 to 500 Hz *0.25 G Peak 1 Octave/min.
Non-Operating	Swept Sine 5 to 500 Hz *0.5 G Peak 1 Octave/min. 3 axes, 3 directions

Acoustic Noise

(A) curve weight

Streaming Write/Read	35 db (A)
Insert/Eject	60 db (A)

Note

The sound-meter on (A) scale is located 1m in front of the center of the drive front panel.

Shock

Operating	No Data Loss Half Sine Performance 5 G Peak 3 ms 3 axes, 3 directions *Interval 10 seconds
Non-Operating	No Device Damage Half Sine 90 G Peak 3 ms (30 G Peak 11 ms) 3 axes, 3 directions

Temperature and Humidity Range

Temperature

Operating	5 °C to 40 °C (ΔT<10 °C/h)
Non-Operating (mech.)	– 40 °C to 70 °C (ΔT<20 °C/h)
Non-Operating (tape)	– 40 °C to 45 °C (ΔT<20 °C/h)

Humidity

Operating	20 to 80% RH, non-condensing Maximum wet bulb temperature = 26 °C
Non-Operating (mech.)	5 to 95% RH (ΔT<30%/h)
Non-Operating (tape)	20 to 80% RH (ΔT<30%/h)

Power Requirements

Model	Voltage	Max Ripple	Current	
			Typical	Maximum
SDX-400 series	5 V +/– 5 %	100 mVp-p	1.3 A	2.5 A
	12 V +/– 10 %	150 mVp-p	0.4 A	1.2 A

Suspended Particulate

Operating	Less than 150 microgram/m^3 Based Sampling period 24 hours

ESD

Discharge Voltage	< 15 kV: No operation failure < 20 kV: No drive damage

Air-cooling Requirement

Surrounding temperature	< 40 °C

Clean air flow is recommended to minimize the possibility of data loss.

Acer Contacts

For further information, please contact:

http://csd.acer.com.tw/

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SDX-400C 磁帶機

SDX-400 系列磁帶機是一使用 AIT(Advanced Intelligent Tape)科技的高容量資料儲存裝置。SDX-400C磁帶機經由先寫入後讀取，錯誤更正編碼的額位水準和其他特徵而達到高資料可靠性。

SDX-400 系列磁帶機儲存資料在一標準格式化稱爲 AIT 和 ALDC 格式的磁帶上。

介紹

產品特性

	SDX-400C 系列 *
資料儲存容量	35G 位元組容量（AIT-1 230m 磁帶） （使用資料壓縮，大約 70 G～105 G 位元組）
傳輸速率 （持續的）	每秒 4M 位元組（AIT-1 格式） （使用資料壓縮，大約每秒 8 M～12 M 位元組）

* 資料壓縮功能也適用在 SDX-400C 機種。

- 支援格式：AIT-1
- 不相容 DDS 和 EXABYTE 格式磁帶
- 高瞬間傳輸率
  - －12MB/sec 非同步
  - －40MB/sec 同步
- 大的 10MB 的緩衝記憶體
- 3.5” 外型 /5.25” 外型
- 內建的 SCSI 界面
  (ULTRA/WIDE 和 LVD/SE(Single-ended) 模式）
- 支援可變的或固定的記錄長度
- 支援 SCSI 切斷 / 仲裁
- 先寫入後讀取的功能 (RAW)，可選用開或關
- 讀取重試可選用開或關
- 資料框重寫功能
- 3 段錯誤改正碼判定 (EEC)
- 高速搜尋（一般讀 / 寫速度 120 倍）
- 隨機讀取，添加寫入

防護措施

安裝

請勿將磁帶機置於下列場所：

- 高濕度區
- 高溫區
- 有機械衝擊和振動地方
- 陽光直射

操作

- 當磁帶機運作時，請勿移動，否則可能會導致故障發生。
- 避免將磁帶機曝露於溫度突然由低變高的環境，否則可能會造成磁帶機內部凝結水氣。 如果周圍溫度突然上升而要啓動磁帶機，請在啓動磁帶機之前要等待至少一小時。 如果你在溫度突然增加之後立即嘗試操作磁帶機可能會造成故障。
- 當磁帶還在磁帶機內時，請勿關機。

運送

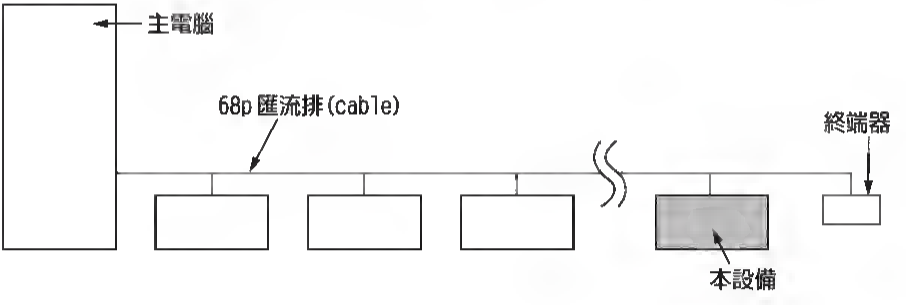
- 請保留原始的包裝材料，以備日後磁帶機的運送。
- 在移動磁帶機之前，請先取出磁帶。將磁帶機由電腦內取出後，再裝於原始的包裝箱內。

SCSI 的終端連結

SDX-400C 符合 Microsoft PC97 標準，這標準需要內部的驅動終端連結和外部的終端器。

Microsoft PC97 SCSI 的需求

SCSI 的周邊不需在匯流排線上終端連結，在內部和外部連線末端用插入式(PLUG-IN)連結器取代終端連結。

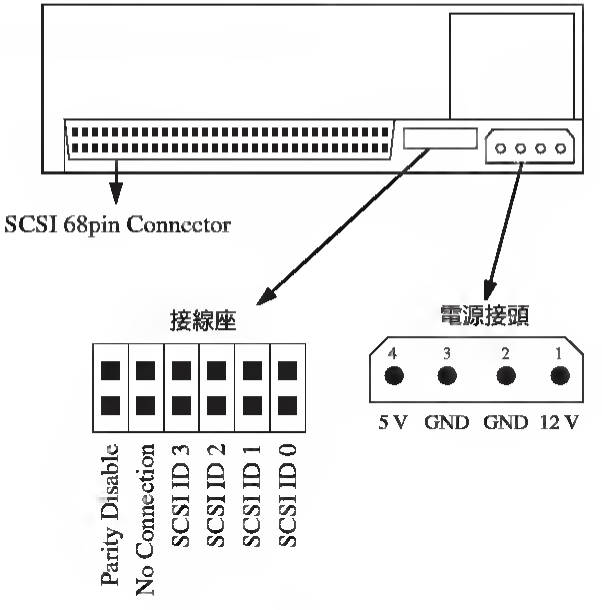


安裝

連接 SCSI/SCSI 識別碼設定 / 選擇開關

SCSI ID

SCSI ID	PD	N.C	3	2	1	0
0			■	■	■	■
1			■	■	■	□
2			■	■	□	■
3			■	■	□	□
4			■	□	■	■
5			■	□	■	□
6			■	□	□	■
7			■	□	□	□
8			□	■	■	■
9			□	■	■	□
10			□	■	□	■
11			□	■	□	□
12			□	□	■	■
13			□	□	■	□
14			□	□	□	■
15			□	□	□	□



Parity

Disable	□□
Enable	■□

Note : □□ = 表示接通

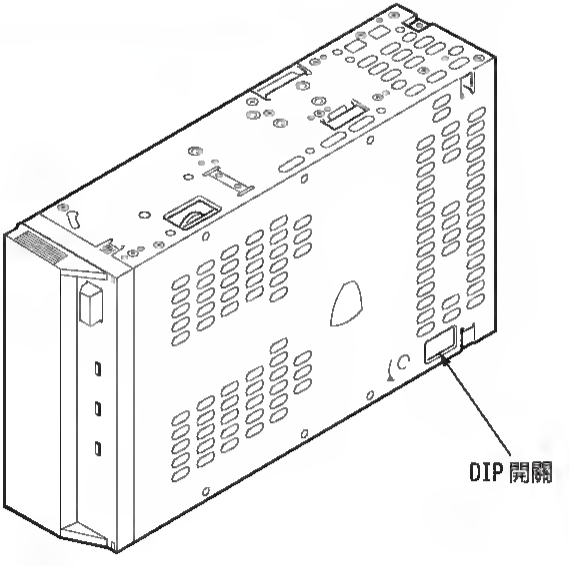
■□ = 表示不接通

□ 表示無關聯

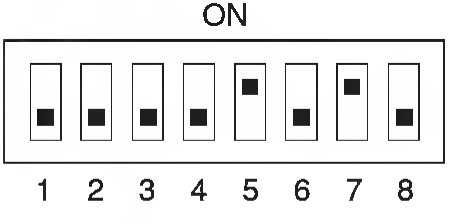
同位檢查解除接線(JUMPER)：

同位檢查功能可用接線(JUMPER)方式解除。當左邊接線接通時，同位檢查功能將被解除。不然，一般情況下同位檢查功能一直是開啓的。

選擇開關(DIP Switch)



DIP 開關位置



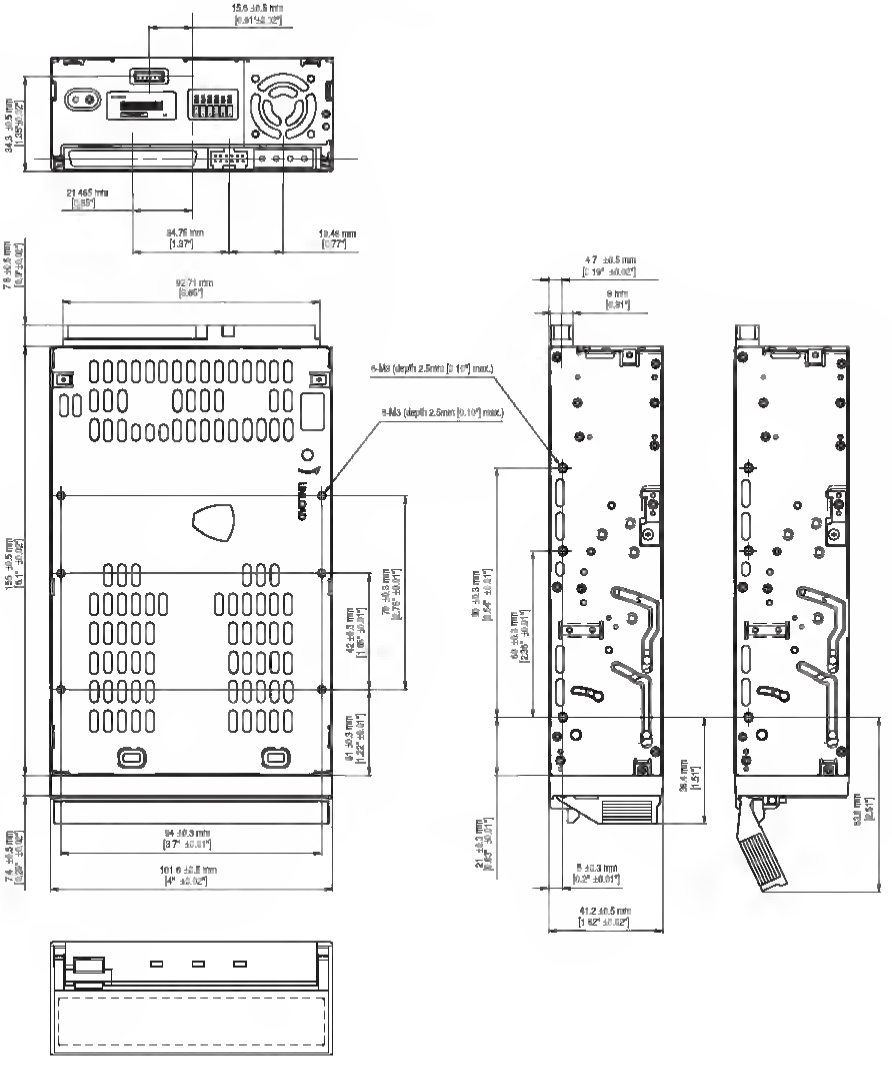
1 Reserved (OFF)
2 Reserved (OFF)
3 Reserved (OFF)
4 Reserved (OFF)
5 Terminator Power (ON)
6 Reserved (OFF)
7 DC Control (1) (ON)
8 DC Control (2) (OFF)

資料壓縮控制DIP開關

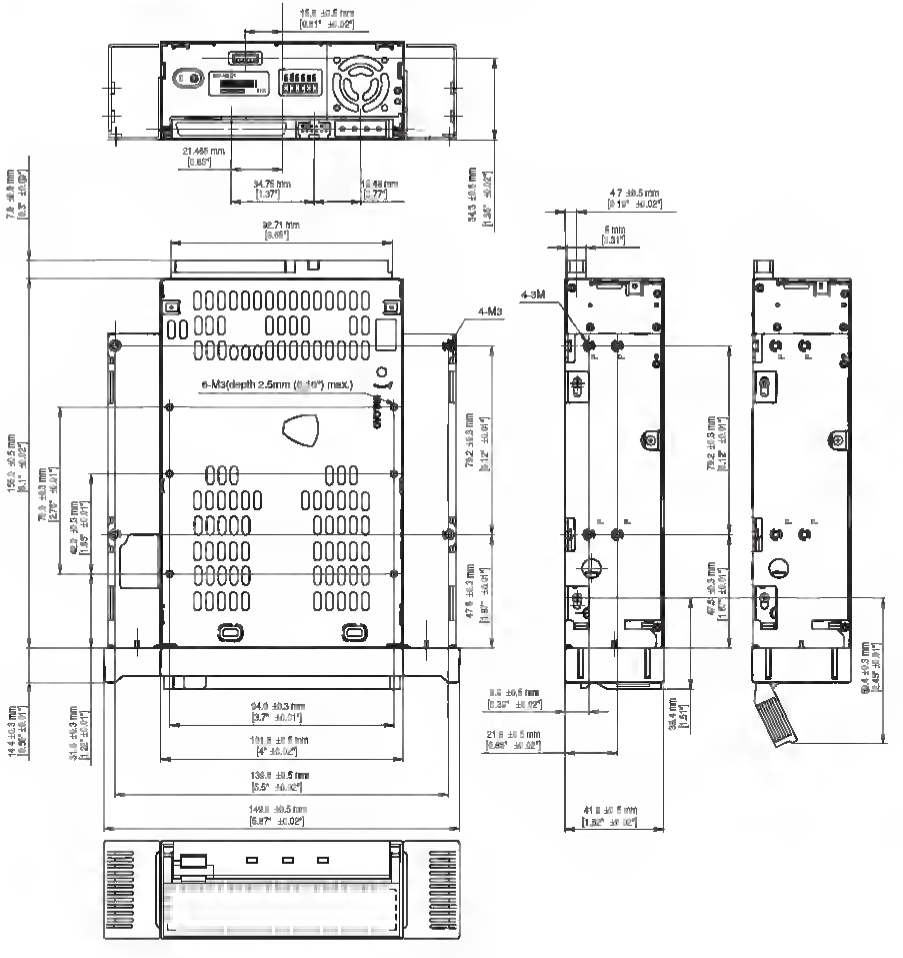
資料的壓縮是經由DIP開關的選擇，當DIP開關的位置“7”撥在“ON”時，爲啓動資料壓縮的功能，若DIP開關的位置“8”撥在“ON”時，則爲解除了被主電腦控制。

安装孔位

3.5” 標準高度(SDX-400C)的安装孔位



5.25” 標準高度(SDX-400C/R)的安裝孔位

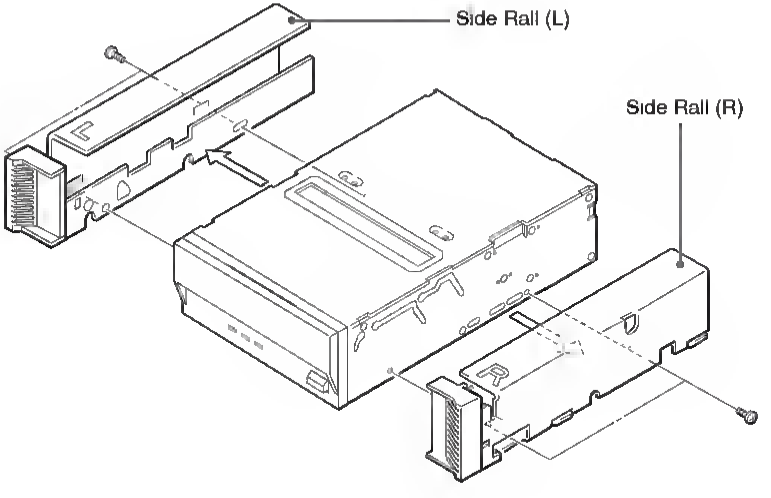


從5.25”型號改裝為3.5”型號

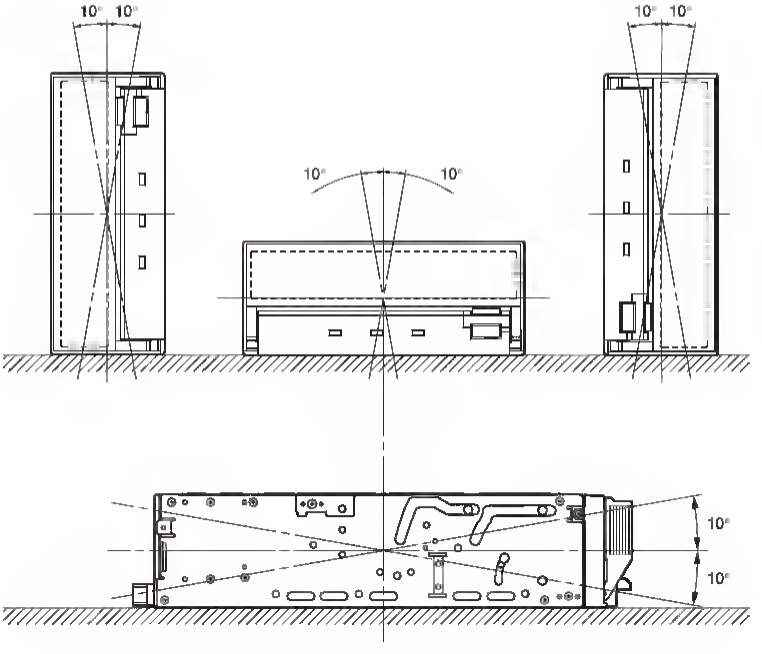
您可以自己將SDX-400C/R(5.25”型號)改裝爲SDX-400C(3.5”型號)。

1 擰掉兩側側板上的2個螺絲。

2 取下側板。



方向

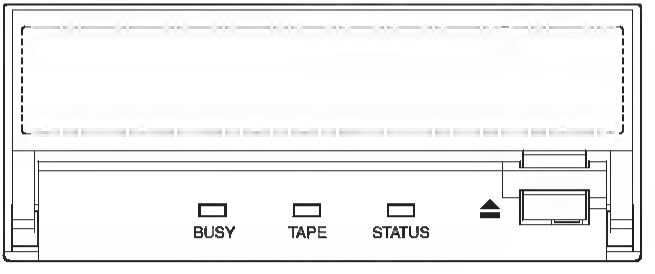


操作

三個 LED 指示燈的位置

前面面板有三個 LED 指示燈（忙碌 BUSY ，磁帶 TAPE 和狀態 STATUS）和一個退出鍵 EJECT 。

3.5” 標準高度的前面面板



指示燈號的意義

LED			意義		
BUSY	TAPE	STATUS	執行	磁帶匣	其他
□	□	□	無	無	無
■	□	□	SCSI	無	無
□■□	□■□	□	驅動	已上帶/未上帶	無
□■□	□■□	■	驅動	已上帶/未上帶	寫入保護
□	■	□■□	無	已上帶	清潔中
□	■	□	無	已上帶	無
■	■	□	SCSI	已上帶	無
□■□	■	□	SCSI/驅動	已上帶	無
無關聯	■	■	*	已上帶	寫入保護
無關聯	▬	無關聯	*	已上帶	錯誤速率警告
*	*	▬	*	*	要求清潔
*	*	□■□	*	*	自我測試失敗
■□■	*	*	*	*	等待重置
*	■□■	*	*	*	等待退匣

表內“*”：表沒有定義

3.5秒亮/0.5秒滅

每一次亮0.25秒

0.25秒亮/0.5秒滅（兩次）

滅

亮

0.25秒亮/0.25秒滅

磁帶機操作

裝入卡帶

將卡帶上的箭頭朝向磁帶機，插入卡帶，當卡帶被插入時，磁帶機會自動載入卡帶。

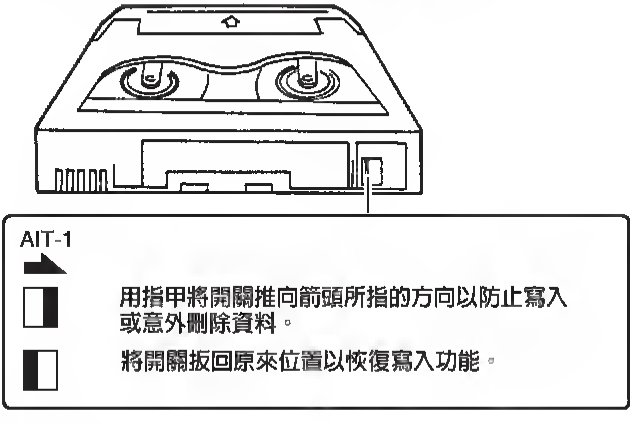
取出卡帶

卡帶能以 SCSI 取出命令或透過按下退出鍵而從 SDX-400C 取出。

按下退出鍵，磁帶進入 BOT ，磁帶機導出卡帶，並從插槽退出卡帶。

卡帶寫入保護

將卡帶背面的滑動開關撥向箭頭方向，使其進入寫入保護狀態，在這種狀態下，資料只可以由磁帶讀取而不能寫入。



使用清潔卡匣

SDX-400C 系列，清潔功能建立在磁帶機內，因此，定期使用清潔匣去清潔或其他要求是不需要的。但是然磁帶機在最差的情況下，仍無法恢復原有功能，此時建議使用清潔帶。

緊急取出卡帶的步驟

1 將磁帶機自機座取出或移除外殼取出磁帶機，使磁帶機底部和右側容易做調整處理。

2 移開磁帶機的上蓋。

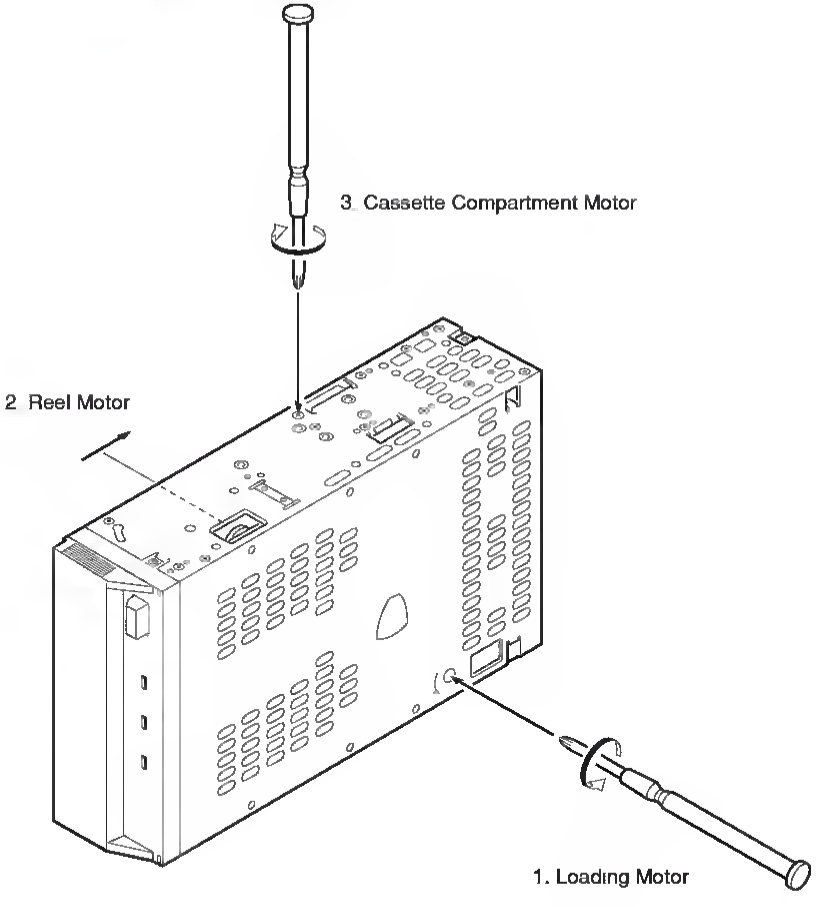
3 位於磁帶機底部有一開孔是載入 / 導帶馬達中心軸調整孔，可用精密螺絲起子插入來旋轉調整。

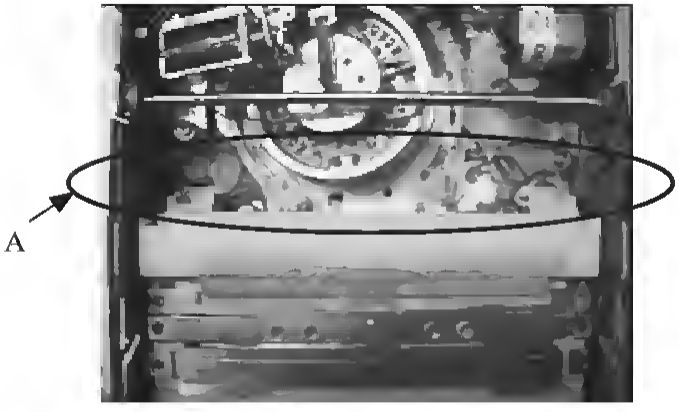
4 逆時針方向轉動馬達中心軸去帶動導帶機械裝置退回原始位置（見下圖步驟 1）。

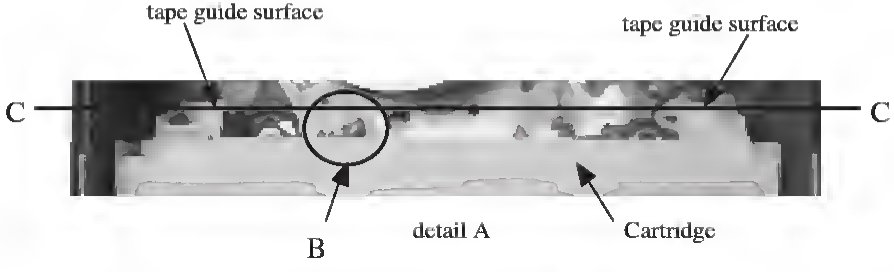
5 在手動退出磁帶之前，必須使磁帶鬆弛部份拉緊，預防磁帶損壞。順時針方向轉動磁帶機右側的傳動裝置，繃緊磁帶（見下圖步驟 2）。

6 在繃緊磁帶後，以精密螺絲起子順時針方向轉動磁帶機右側的螺絲，直到磁帶匣在磁帶機內被升起並退出（見下圖步驟3）。

7 將磁帶機送回 Acer 修理。







照片-1：上帶機的初期位置

注意

當 Guide B（見上圖）的面積在線 C-C 之下，立即停止馬達的旋轉，否則驅動齒輪會損壞。
（註：線 C-C 的定義：卡匣內兩倍循環帶的引導表面）

界面應用

支援的 SCSI 訊息

Abort

Bus Device Reset

Command Complete

Disconnect

Extended Message

- Synchronous Data Transfer Request
- Wide Data Transfer Request

Identify (w/&w/o Disconnect)

Ignore Wide Residue

Message Parity Error

Message Reject

No Operation

Restore Pointers

Save Data Pointer

支援的 SCSI 指令

Erase

Inquiry

Load/Unload

Locate

Log Sense

Log Select

Mode Select

Mode Sense

Prevent Allow Medium Removal

Read

Read Block Limits

Read Buffer

Read Position

Report Diagnostic Result

Release Unit

Receive Density Support

Report Luns

Request Block Address

Request Sense

Reserve Unit

Rewind

Seek Block

Send Diagnostic

Space

Test Unit Ready

Verify

Write

Write Buffer

Write Filemarks

規格

產品規格

體積

	SDX-400C	SDX-400C/R
高度	41.2 mm (1.62 in)	41.2 mm (1.62 in)
寬度	101.6 mm (4.0 in)	149.0 mm (5.87 in)
厚度	155.0 mm (6.1 in)	155.0 mm (6.1 in)

高度

工作中	0 到 10000 英尺

振動

工作中	掃描正弦波方式 5 到 500Hz * 振幅 0.25 G peak 1 Octave/min
未工作中	掃描正弦波方式 5 到 500Hz * 振幅 0.25 G peak 1 Octave/min，3 軸 3 方向

使用中產生聲響

(A) 量化音譜值

寫/讀	35 db (A)
置入/退出	60 db (A)

注意

測試時，將音壓計放在 A 單位，並在產品正前方一公尺處量測。

機械衝擊

工作中	沒有資料損失 半正弦波條件 效率 5 G Peak 3 ms 3 軸 3 方向 * 間隔 10 秒一次
未工作中	產品不損壞 半正弦波條件 90 G Peak 3 ms (30 G Peak 11 ms) 3 軸 3 方向 * 間隔 10 秒一次

溫度和濕度範圍

溫度

工作中	5°C到40°C（溫度變化<10°C/h）
未工作中（機械結構）	-40°C到70°C（溫度變化<20°C/h）
未工作中（磁帶）	-40°C到45°C（溫度變化<20°C/h）

濕度

工作中	20到80% RH（不結霜最大濕球溫度26°C）
未工作中(機械結構)	5到95% RH（濕度變化<30%/h）
未工作中(磁帶)	20到80% RH（濕度變化<30%/h）

電源要求

型號 Model	電壓 Voltage	漣波 Max Ripple	電流 Current 常態	電流 Current 最大
SDX-400C	5 V +/-5 %	100 mVp-p	1.3 A	2.5 A
	12 V +/-10 %	150 mVp-p	0.4 A	1.2 A

懸浮粒子

工作中	少於150微克/m（以24小時取樣爲準）

電磁相容

輻射/傳導	EN55022/94+EN55022A1/95 Class B

靜電

放電電壓	<15kV：無操作失敗 <20kV：無磁帶機損壞

空氣冷卻要求

周圍溫度	<40°C

儘可能在空氣良好且流通的環境中使用，才能避免資料讀取或寫入產生流失及錯誤的情形發生！

客戶聯繫

如需進一步相關訊息，請參閱以下網址：

http://csd.acer.com.tw/

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